487 up and down the slopes in a straight line are a real nightmare for any non-Murundi.

Another circumstance which makes journeying more
491 arduous is that in spite of the innumerable streams and rivers there are hardly any bridges (ikiraro) in the whole of Urundi and Ruanda. The chief reason for this defect is the lack of suitable timber in these treeless areas. Even where there is still a sufficient number of trees, a bridge is built only in very rare cases since the entire width of the valley bottoms is usually covered with reed or papyrus swamps through the middle of which weaves a narrow, open watercourse. The swamps are too wide for building bridges.

Usually there is no other way but to wade through the swampy valley bottoms and streams up to one's knees or hips in the black, stinking morass. Only rarely are papyrus fronds or reeds cut down in bunches and piled next to each other and on top of each other to form a kind of floating bridge which prevents the travelers from sinking too deeply into the swamp. When reaching wide, open rivers, such as the Ruvuvu, Akanjaru, Luvironsa, and others, the traveler seeks out well-known fords and wades across, often up to his shoulders in water, and he uses a stick or a spear for support against the force of the
[482] stream. Everything that has to be kept dry must be carried in a bundle on the head. At the same time there is much shouting to frighten away the crocodiles. If the river is too deep,
501 dugouts are used for the crossing, and the shore dwellers make
505 a living at this. [72] If only a few persons and light burdens have to be ferried across, primitive rafts (ikitebo) are used. They are made of several layers of dried papyrus sticks which are tied together (Plate 26b). The rafts may be used a few times until they have soaked up too much water. On the Malagarasi River, large tubs made of tree bark are used. They are big enough for one man or one burden and are pulled and pushed across the river by two or three men who have to swim (No. 19, p. 448).

491 If it happens that a big tree is standing near a deep stream which cannot be forded, it is transformed into a bridge

491 by cutting it down, causing it to fall across both edges of the brook. If necessary, a rope of lianas is spanned across next to the bridge to help the traveler maintain his balance when walking over it. I have seen several such tree bridges in Uha where there are more trees than in Urundi. There are no suspension bridges.

In the whole interlacustrine region I have not seen any real bridges built by the natives themselves. Yet van der Burgt describes such a bridge: a few fork-shaped poles are rammed next to each other in the stream bed, and a few long pieces of timber are placed in the forks approximately parallel to each other, thus spanning the entire stream. A great number of crossbeams, approximately two meters long, are fastened to these, and finally bundles of reed or papyrus stalks are tied on top of them so that one may comfortably walk across.

Wherever missionary stations or colonial troops have built roads, there are solid wooden bridges on the European model, and wherever the route traverses swamps, there are earthen dams and corduroy roads. However, the lack of trees in this country will always be an obstacle to the construction of bridges.

The natives always make the cattle swim through the water or wade through the swamps even when bridges exist. Any crocodiles which may be in the vicinity are frightened away by shouting.

482 Since neither the Barundi nor the Banjaruanda have animals to ride or burden-carrying animals, all burdens and also people who are unable or unwilling to walk have to be carried by men. Burdens are packed in small or large bundles, generally wrapped in dry banana leaves, or in large baskets made of plaited bast. They are carried freely on the head or sometimes, for a change, on the shoulder but never in a sling or net on the back as, for example, in Kisiba or in Usâmbiro.

493 However, sick people or important persons who do not wish to walk travel on a stretcher (isjugi) which is carried by two men on their shoulders. The king also uses such a stretcher for

487 the general direction is maintained. One must often make considerable detours in order to keep to the more frequented, convenient main arteries. This struck me particularly when, in Njakagungu on the way from Lake Mohasi to Nsasa, I crossed the road that led from Ruanda to Karagwe. The paths hug the ridges of the hills, since travel in the valleys is very difficult because of the many swamps. The constant ascent and descent from one ridge to another makes travel very troublesome.

493 The important people of the country are carried in basket litters (ngobi) on their journeys. The litter is like a woven trough. It is made [166] of bamboo sticks (migano) which run lengthwise and are fastened to each other with strips of rattan. The trough has at least three handles on each side through which are inserted two strong bamboo sticks. The bearers carry these sticks on their heads on round cushions. They move at a gentle trot. The occupant of the litter is in a half-reclining position.

484 The chiefs travel with all the comfort of home; they are, for example, accompanied by two cows (nzishwa) which are milked en route.

[492] Only Europeans ride animals.

●491 Until recently bridges were entirely unknown in Ruanda. Now one has been built on land belonging to the Ruasa Mission over the rapids of the Mukungwa which were difficult to cross. Another connects the Issawi Mission with the neighboring hills. It stretches across a swamp.

501 Since ancient times river crossings have been provided with dugouts to ferry travelers. At the Akanjaru ferry near Kihinga, I had an opportunity to see a raft made of reeds and papyrus tied together. The raft was pulled from one shore to the other by means of a rope made out of plaited papyrus. The raft was three meters square and was strong enough to carry seven porters with their loads.

491 The Akanjaru which is one kilometer wide did not have an open surface of water as much as 20 meters wide on which a raft could move. It was a thick papyrus swamp through which we would have had to wade up to our hips at that time if a comfortable crossing had not been built with reeds and papyrus stalks laid next 312 to each other. Small dams are often constructed in the swamps to make a watering place for the cows. If the swamp has a considerable

651 and not infrequently open battles whenever collection takes place.
661 On the way to Mulera, at Kwa Rutagungira, I saw several wounded Batutsi who had to pay for their zeal as officials with holes in their hides. The business efficiency of the tax collectors is well characterized if we note their habit of substituting some of their poorer stock for the better cows that are delivered as the king's taxes. In view of its chronic character, this misuse and plunder must be regarded as a form of official remuneration.

651 We must emphasize the fact that in Mulera the taxes of the ngabo are linked to the community, the people, and not to the land they cultivate. That is why the outsider who has settled on alien soil with the approval of the residents does not participate in community taxes. He continues to pay the taxes of his own clan, and only if he is adopted by the resident clan does he pay taxes where he has settled.

651 This principle of family tax becomes complicated the mo-
178 ment pacification makes possible the disruption of clans which under the most primitive conditions have been held together by blood revenge. I saw the consequences of this complication of social conditions in Mulera in the form of a punitive expedition which reduced to ashes the settlement on Mount Kisseke. A few outsiders had bought with gifts permission to settle on Kisseke from the established residents. A few weeks after they were settled, some Batutsi arrived who had the right to collect taxes from the community of new settlers but who were complete strangers to the old established population. The new settlers
[687] promised the old ones a bull, and the latter drove off the Batutsi with weapons, killing a few and wounding several. A punitive expedition of government troops, undertaken because of Musinga's complaint, was the sequel.

651 The ferry toll is a special tax that affects traders particularly.
●491 It is collected by batware who are stationed at the ferries and whose people run the boats. The toll is very high. For a traveler with his pack, it is ten large beads, that is to say, a third of a day's wages. Twenty men with a herd of goats paid a piece of cloth (nguo).

[275] The batware who collect the ferry toll must also keep watch over the traffic. At the border ferries, for example, on

651 the Akanjaru which can be crossed at only a few places because
491 of the swampy condition of its channel, it is their duty to prevent the natives from leaving Ruanda without the king's consent. It is obvious that under these conditions the ferry tolls are sometimes increased very considerably.

651 A further burden affecting the trader is the market tax, indamu.
443 In Nyundo it was very high, 10 to 15 percent of the value of the article traded. Here Lwakadygi, Gamidji, and Makobi took turns collecting the tax.

The result of this high tax is that small auxiliary markets are set up along the paths near the markets. Here transactions are tax free. The chiefs who collect the indamu also settle disputes that arise in the markets.

651 Ivory from slain elephants and leopard skins are the property of the king and must be sent to Nyanza. The regulation requiring leopard skins to be delivered seems to be connected with the belief that after their deaths the members of the family of Ruanda rulers become leopards.

721 Military Affairs. The king makes all decisions concerning
643 war and peace. He wages war in order to punish rebellious vassals or to win over vassals of other kings.

701 The troops are made up of ngabo. They are divided into contingents, the names of which are independent of the names of the provinces or of the chiefs who happen to be in command. Lieutenant Von Parisch (1) mentions the Bangogo contingent under

1. Parisch, F. R. Von, "Zwei Reisen durch Ruanda 1902 bis 1903 [Two Journeys through Ruanda 1902 to 1903]," Globus, Vol. 86 (1904), p. 77.

Ruenankiko (Ruidangigo) and the Lujango contingent under Kabare.

Usually only a few contingents are called out for military expeditions. This was the case, for example, with the last expedition against the Mutwa Bassebia in 1906, which ended in failure.

Generals are appointed separately by the king for each expedition. Ruhara Aramanzi was the commander-in-chief of the

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It should also be pointed out that the supply of the staple foods was usually short at the end of the dry season and that starvation periods, in which many people died, were occurring several times in a life-time. For instance in a thirty-year period (1900–30) among the events used as references to assess the age of people, three famines are remembered: in 1908, 1918, and 1924.

The above considerations take into account only the total production of available food in the country. But it is obvious that in a society composed of several groups very unequal in power, access to food was not the same for everybody. It seems that we may safely infer that the normal diet of many Hutu was barely adequate to sustain people who had to spend a considerable amount of physical effort in agricultural tasks.

In the preparation of meals, two facts relevant to health should be mentioned. Firstly, the methods of cooking very often resulted in a diminution of the nutritive value of food. For instance, beans cooked in water lose from one-sixth to one-fifth of their carbohydrates.[27] Secondly, the standards of cleanliness in food preparation were very high among the Tutsi, though more for magical than for hygienic reasons. This applies particularly to milk. To avoid flies and dust, receptacles containing milk were always closed with basketwork conic covers adorned with elongated geometric patterns. It is believed that if milk comes into contact with anything impure, the cow would be harmed. The contaminating substances were not always connected with the Western idea of dirtiness. For instance water was considered dangerous to milk. Consequently the wooden vessels in which milk was kept were not washed out with water but with cows' urine.

The equatorial situation of Ruanda, combined with the rather cold climate due to its elevation, resulted in the spreading of diseases characteristic of tropical as well as of temperate regions. Yaws, typhoid fever, tuberculosis, recurring fevers, and a large variety of intestinal diseases are quite common in Ruanda today.[28] They are not new diseases resulting from new conditions introduced by the European occupation, such as malaria, which was unknown in Ruanda except in the narrow strip adjacent to the Ruzizi River until roads were built permitting a very rapid transportation of people, or some venereal diseases which spread

[27] Ministère des Colonies, 1951b, p. 49-51.
[28] Cf. Lestrade, 1955; Vincent, 1953, pp. 16-18.